BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the	)	
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PUBLIC UTILITIES COMMISSION	)	DOCKET NO. 03-0371
	)	
Instituting a Proceeding to Investigate Distributed Generation in Hawaii	)	
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	)	

HESS MICROGEN, LLC'S

PRELIMINARY STATEMENT OF POSITION

and

CERTIFICATE OF SERVICE

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HESS MICROGEN LLC'S
PRELIMINARY STATEMENT OF POSITION

TO THE HONORABLE PUBLIC UTILITIES COMMISSION OF THE STATE OF HAWAII:

HESS MICROGEN, LLC ("Hess") hereby respectfully submits its Preliminary Statement of Position in the above-referenced Docket to the Hawaii Public Utilities Commission ("Commission") pursuant to the Commission's Prehearing Order No. 20922.

I. Hess' Preliminary Position on Planning Issues:

1. What Forms of Distributed Generation (e.g., Renewable Energy Facilities, Hybrid Renewable Energy Systems, Generation, Cogeneration) are Feasible and Viable for Hawaii?

All forms of distributed generation ("DG") are feasible and viable for Hawaii. However, some forms of DG may have features that make it more feasible and viable for Hawaii. For example, Combined Heat and Power ("CHP") is a very feasible and viable form of DG for Hawaii because it is: (i) reliable; (ii) available and can meet the needs of peak demand; and (iii) easy to site because it has a small footprint.

CHP is an electricity generating system whose waste heat is captured and used for heating and/or cooling applications. The key benefit of CHP, and the reason why it

has garnered support nationally and in other states, is that it is inherently more efficient and environmentally friendlier than conventional electric generated power. Conventional electrical generation wastes a substantial portion of the fuel energy by allowing the heat created in the generation process to escape into the atmosphere in the form of thermal pollution. Additionally, the losses in the transmission and distribution system add to the inefficiency, such that approximately only 1/3 or less of the energy in the original fuel results in usable power for the customer.

The issue of what forms of DG is feasible and viable for Hawaii is pertinent and needs to be addressed in this Docket because it will inform the Commission of the various options that are available in regards to DG.

2. Who Should Own and Operate Distributed Generation Projects?

DG projects should be owned and operated by both regulated electric utility companies ("utilities") and private companies to provide customers with the most options. The Utilities and private companies offer customers distinct options in regards to ownership, installation, maintenance, and rates.

The participation of the utilities will most likely increase the amount of DG systems deployed and would allow their rates and services to be regulated by the Commission.

The participation of private companies will provide customers with an alternative to the utilities, so that the customer can select the provider that will best meet their needs for reliable power at a fair cost. Also, private companies provide customers the option of having the meter on their side.

The issue of who should own and operate DG projects is pertinent and needs to be addressed in this Docket because once the issue is resolved it allows both the utilities and private companies to adjust their business plans accordingly. Also, resolution of this issue will assist in the expeditious deployment of DG systems.

3. What is the Role of the Regulated Electric Utility Companies and the Commission in the Deployment of Distributed Generation in Hawaii?

The role of the regulated electric utility companies ("utilities") should be the same as private companies that are competing to deploy DG to customers.

The role of the Commission is to regulate the utilities to insure that they provide ratepayers with reliable power at a fair price. Also, the Commission's role should be to insure that the ratepayers have options to best meet their need for reliable power at a fair price. The Commission must insure that the utilities are dealing fairly and in a timely manner with the private companies who are offering DG to customers.

The Commission must insure that the utilities and the private companies are competing on a level playing field. For example, the utilities should not be allowed to charge customers of the private companies standby charges or other fees and charges that it does not charge its DG customers. Nor, should the utilities be allowed to provide their DG customers with special customer retention discounts to the disadvantage of private companies.

The issue of the role of the utilities and the Commission in the deployment of DG in Hawaii is pertinent and needs to be addressed in this Docket because it will assist in the expeditious deployment of DG systems on a level playing field for both the utilities and private companies. It will also assist in meeting the needs of customers to have alternatives when it comes to meeting their need for reliable power at a fair price.

II. Hess' Preliminary Position on Impact Issues:

1. What Impacts, if any, will Distributed Generation have on Hawaii's Electric Transmission and Distribution Systems and Market?

The use of DG in Hawaii will delay and/or replace transmission and distribution ("T&D") facilities needed by the utilities. Thus, reducing the capital cost of the utilities, and in turn, reducing the rates for ratepayers.

Additionally, on-site DG will benefit traditional utilities' systems. One of the complaints of the utilities is that they must build the infrastructure to carry the peak customer load and system load; however, the system peak only occurs for a portion of the day. As a result, utilities' systems in general are less than 60% utilized. On-site DG operates when the customer requires the most energy from electricity and heat. If customers do not have high electricity and heat requirements at night, for example, the on-site cogeneration units can be turned off. The practice of turning off on-site generation when both the customer and the utility are experiencing low demand serves to levelize the utility's system demand and increase the overall utilization of the distribution system. The net effect is that the utility may not have to add new facilities or upgrade its infrastructure as often. This will result in lower prices to ratepayers.

On-site generation using synchronous generators also has the potential to provide voltage support to areas on the utility distribution system where voltage support is tenuous.

Finally, because on-site generation is closer to the load there is vast reduction in traditional T&D line losses that are usually experienced by the traditional utilities' systems.

The issue of the impacts, if any, that DG will have on Hawaii's electric T&D systems and market is pertinent and needs to be addressed in this Docket to provide the Commission with the information to weigh the costs and benefits of DG.

2. What are the Impacts of Distributed Generation on Power Quality and Reliability?

DG will have positive impacts on power quality and reliability. Reduced frequency and duration of distribution system interruptions, improved power quality through steady voltage regulation, reduced sags and surges, and improved reactive power control. Also, by having the DG unit located near the end use load, DG will reduce energy losses in the transmission, subtransmission, and distribution systems.

DG systems are more reliable today than ever before; largely due to computer controls that can warn of problems before they occur. Each system can be programmed to call for maintenance any time an out-of-tolerance condition is noted. The maintenance is then scheduled with the customer and the utility for an off-peak time for repair.

For example, Hess outlines an operation schedule of 7800 hours per year for most of its projects. This schedule reflects both the hours when it is economical for an onsite CHP facility to operate, as well as maintenance times. Once a properly designed and installed unit is commissioned, this level is easily attainable.

Many Hess sites are designed for multiple units. The occurrences of internally caused simultaneous outages, even with just two units, are extremely rare. Any single outage is more likely to occur during an utility system's off- peak period, since these periods comprise more than 60% of the year. A contingent of three DG systems will together be more reliable than the utilities in providing at least partial service. This is

largely due to the fact that DG is not affected by car-pole accidents, bird or animal contacts, or tropical storms in the same way an utilities' system typically is affected.

The Hess units on customer's sites are not part of the utility's grid, thus, these units are able to operate when the utility's grid is down. Also, because Hess units on customer's sites are sized on thermal load versus electrical load, thus never covering 100% of a customer's electrical needs, the Hess units do not feedback into the utility's grid and, thus, do not have a negative impact to the utility's grid.

The issue of what is the impacts of DG on power quality and reliability is pertinent and needs to be addressed in this Docket to provide the Commission with the information to weigh the costs and benefits of DG.

3. What Utility Costs can be Avoided by Distributed Generation?

Every element of a utility's costs can be avoided by the deployment of DG. The use of DG in Hawaii will delay and/or replace T&D facilities needed by the utilities. DG will also delay and/or replace power plants and central station generation by meeting new load and energy requirement. Thus, reducing the capital cost of the utilities, and in turn, reducing the price for the ratepayers.

The issue of what utility costs can be avoided by DG is pertinent and needs to be addressed in this Docket to provide the Commission with the information to weigh the cost and benefits of DG to the utility system.

4. What are the Externalities Costs and Benefits of Distributed Generation?

CHP is environmentally friendlier than traditional utility generated energy because it avoids emissions from (i) the reduced thermal energy that is generated due to

CHP, (ii) the actual and displaced production of pollutant emissions, and (iii) the emissions attributable to T&D losses that do not occur.[1]

Second, with CHP systems it is possible to add capacity incrementally, which can help address uncertainties with respect to the need for new central station generation and with respect to the permitting (and, therefore, completion) of such facilities. That means that the utility has the benefit of spreading out CHP systems over time. For private companies, it means it can offer DG systems to customers in a manner that is most cost-effective for them.

Third, the deployment of CHP systems will delay and/or replace T&D facilites needed by the utilities.

Finally, the addition of energy-efficient DG systems is a step closer in meeting the State of Hawaii's energy policy to reduce the use of fossil fuels.

The issue of what are the externalities costs and benefits of DG is pertinent and needs to be addressed in this Docket to provide the Commission with the information to weigh the cost and benefits of DG to the utility system.

5. What is the Potential for Distributed Generation to Reduce the Use of Fossil Fuels?

The deployment of DG, especially CHP, can vastly reduce the use of fossil fuel in Hawaii. The use of the thermal energy uses less fossil fuel because one fuel input is used to produce two useful products: electricity and thermal energy. Traditional electric generation wastes a substantial portion of the fuel energy by allowing the heat created in the generation process to escape. Unfortunately, most power plants have no use for this heat, nor do they have customers close enough to the heat source to make recapturing the

[1] In this Preliminary Statement of Position, Hess is only addressing the externalities costs and benefits as it

heat economical. However, since customers often use electricity to heat water or air or cool air, the power plants must generate substantially more electricity to sell to customers to replace the heat energy that was wasted at the plant. This lack of efficiency results in an increase in the fuel burned by the utility to generate electricity, and consequently can increase pollution levels.

In the United States as a whole, 56% of electricity is generated by coal, one of the most air polluting fuels. The average delivered efficiency of electric utility power plants, after transformation, transmission, and distribution is approximately 27%. On the otherhand, on-site CHP systems results in greater energy efficiencies, lower cost to the self-generator, and lower air pollution. On-site CHP systems capture the heat used in electric production to be used for domestic hot water, kitchen and laundry hot water, boiler preheat water, warm air curtains, heat swimming pools, self-defrosting sidewalks, and absorption-based air-conditioning. The typical fuel efficiency of a CHP plant is 60-90% efficient. Because of the captured heat, a CHP customer will use at least 30% less fuel than a straight electric customer.

In addition to these cost-saving energy efficiency benefits, customers also derive some intangible benefits through use of onsite CHP. For example, many customers are able to achieve higher water temperatures for kitchens and laundries, resulting in a decreased use of sanitizing chemicals. In addition, customers that are at the end of electrical utility circuits report better voltage support with CHP systems.

The issue of what is the potential for distributed generation to reduce the use of fossil fuels is pertinent and needs to be addressed in this Docket to provide the

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relates to CHP.

Commission with the information to meet the State's energy policy to reduce its use of fossil fuels.

III. Hess' Preliminary Position on Implementation Issues:

1. What Must be Considered to Allow a Distributed Generation Facility to Interconnect with the Electric Utility Grid?

Impact to the customer and the rest of the system under normal and abnormal conditions. It is also important to add, that any process regarding interconnection must be: (i) fair; (ii) provide the private companies with all relevant information so that they can respond; and (iii) timely.

Interconnection standards should be based on the National Interconnection Standard IEEE 1547. Deviations to this Standard should only be allowed if both parties clearly demonstrate that the specific site application requires a deviation.

The issue of what must be considered to allow a distributed generation facility to interconnect with the electric utility grid is pertinent and needs to be addressed in this Docket to provide the utilities and private companies guidance to allow for the expeditious deployment of DG.

2. What is the Appropriate Rate Design and Cost Allocation Issues that Must be Considered with the Deployment of Distributed Generation Facilities?

Any rate design and cost allocation must objectively take into account DG's costs and benefits to the utilities' system and customers.

The issue of the appropriate rate design and cost allocation issues that must be considered with the deployment of DG facilities is pertinent and needs to be addressed to insure that the costs and benefits of DG are properly accounted for.

3. What Revisions should be made to the Integrated Resource Planning Process?

The IRP should be revised to show that CHP and other DG technologies could make a significant contribution to the utility capacity.

The issue of what revisions should be made to the Integrated Resource Planning process is pertinent and needs to be considered to provide the utilities and private companies guidance so that they can plan accordingly and to ensure that DG is deployed expeditiously.

4. What Forms of Distributed Generation (e.g., renewable energy facilities, hybrid renewable energy systems, generation, cogeneration) are Feasible and Viable for Hawaii.

See I.1. above.

5. What Revisions should be made to State Administrative Rules and Utility Rules and Practices to Facilitate the Successful Deployment of Distributed Generation?

State Administrative Rules and Utility Rules and Practices need to be amended to include time limits for negotiations with private companies offering DG technologies in regards to Power Purchase Agreements and interconnection. In addition, utilities should be required to provide private companies with all vital information to allow for the deployment of DG expeditiously.

The issue of what revisions should be made to State Administrative Rules and Utility Rules and Practices to facilitate the successful deployment of DG is pertinent and needs to be considered to provide the utilities and private companies guidance so that they can plan accordingly and to ensure that DG is deployed expeditiously.

Respectfully submitted.

DATED: Honolulu, Hawaii, May 7, 2004

SANDRA-ANN Y.H. WONG

Attorney for Intervenor
Hess Microgen, LLC

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I hereby certify that I have this date served copies of the Preliminary Statement of Position of Hess Microgen, LLC upon the following parties, by causing copies hereof to be mailed, postage prepaid, and properly addressed to each such party as follows:

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